

ABSTRACT

A method for selective etching in the manufacture of a semiconductor device comprises: forming a layer (6) of silicon-germanium on a substrate (1) of monocrystalline silicon or on a substrate at least comprising a surface layer of monocrystalline silicon, depositing at least a dielectric layer (7) on the silicon-germanium layer (6) and patterning the resultant structure (8), whereafter the dielectric layer (7) and the silicon-germanium layer (6) are etched away within a predetermined region (9). Preferably, the silicon-germanium layer (6) is amorphous, whereby the dielectric layer (7) is deposited on the amorphous silicon-germanium layer (6) in such a manner to prevent crystallization of the amorphous layer. After etching the structure may be heat-treated such that the amorphous layer crystallizes. The method is preferably applicable for etching an emitter window in the manufacture of a bipolar transistor having a self-registered base-emitter structure.